



<b>Product Name: Smart Phone</b>	<b>Report No.: FCC2022-06453E</b>
<b>Product Model: V Max</b>	<b>Security Classification: Open</b>
<b>Version: 1.0</b>	<b>Total Page: 33</b>

# TIRT Testing Report

<b>Prepared By:</b>	<b>Checked By:</b>	<b>Approved By:</b>	
Stone Tang	Randy Lv	Daniel Chen	
<i>Stone Tang</i>	<i>Randy Lv</i>	<i>Daniel Chen</i>	

# FCC EMC TEST REPORT

<b>Product No:</b>	20221220021903
<b>Product Name:</b>	Smart Phone
<b>Product Model:</b>	V Max, S100Pro All models are with same schematic, The only differences are model no. V Max is main test model, S100Pro is the adding model. No other differences.
<b>Date of Receipt:</b>	Dec.12.2022
<b>Date of Test:</b>	Dec.13.2022~ Jan.8.2023
<b>Issued Date:</b>	Jan.9.2023
<b>Testing Lab:</b>	TIRT
<b>Address:</b>	/

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## History of the test report

Original Report Issue Date: 2023-01-9

- No additional attachment
- Additional attachments were issued following record

Attachment No.	Issue Date	Description

## 1. Certification

<b>Product Name</b>	Smart Phone
<b>Product Model</b>	V Max
<b>Brand Name</b>	DOOGEE
<b>Power supply</b>	Model: HJ-1203000-09 Input: 100-240V~50/60Hz, 0.8A Output: 5V=3A , 9V=3A, 12V=2.75A, 33.0W Max. PPS:5.0V-11.0V 3.0A 33.0W Max.
<b>Applicant</b>	Shenzhen DOOGEE Hengtong Technology CO.,LTD B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No.22, Longhua New District, Shenzhen, China
<b>Manufacturer</b>	Shenzhen DOOGEE Hengtong Technology CO.,LTD B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No.22, Longhua New District, Shenzhen, China

Applicable standard
FCC 47 Part 15 Subpart B:2020
ANSI C63.4:2014

The above equipment has been tested by Beijing Tairuite Inspection&Testing Technology Service Co.,Ltd Shenzhen Branch. Laboratory The results of testing in this report apply only to the product system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

## 2. Test Result Summary

### 2.1. Test Procedures According to The Technical Standard(s):

Emission				
Standard	Item	Result	Remarks	Tested in Lab
FCC 47 Part 15 Subpart B	Conducted (Main Port)	PASS	Class B	TIRT
	Radiated	PASS	Class B	TIRT

#### Note:

- (1) "N/A" denotes test is not applicable in this test report.
- (2) TIRT: Lab. Beijing Tairuite Inspection&Testing Technology Service Co.,Ltd Shenzhen Branch.

### 2.2. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

Measurement uncertainty levels of TIRT Lab		
Measurement	Measurement Frequency Range	U(dB)
Radiated Emission	30MHz~1GHz	4.6
Conduction Emissions	150kHz~30MHz	3.1

### 2.3. Test Instruments List

Conducted emissions on AC mains					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	00953	2022-11-24	2023-11-23
Coaxial Switcher	SCHWARZBECK	CX210	CX210	2022-11-24	2023-11-23
V-LISN	SCHWARZBECK	NSLK 8127	01073	2022-11-24	2023-11-23
LISN	AFJ	LS16/110VAC	16010020076	2022-11-24	2023-11-23
EMI Receiver	ROHDE&SCHWARZ	ESCI3	101422	2022-11-24	2023-11-23

Radiated emissions (Below 1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2022-03-26	2023-03-25
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMA M-10m	21101566	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMA M-1m	21101568	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022-11-24	2023-11-23
SIGNAL	ROHDE&SCH	FSQ40	100010	2022-11-24	2023-11-23

ANALYZER	WARZ				
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplifier	SCHWARZBE CK	BBV9718D	00008	2022-03-26	2023-03-25
Horn Antenna	SCHWARZBE CK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ_EMCC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBE CK	VULB 9168	01328	2021-11-28	2023-11-27



### 3. General Information

#### 3.1. Basic Information of EUT

<b>Product Name</b>	Smart Phone
<b>Product Model</b>	V Max
<b>Brand Name</b>	DOOGEE
<b>Power supply</b>	Model: HJ-1203000-09 Input: 100-240V~50/60Hz, 0.8A Output: 5V=3A , 9V=3A, 12V=2.75A, 33.0W Max. PPS:5.0V-11.0V 3.0A 33.0W Max.
<b>Applicant</b>	Shenzhen DOOGEE Hengtong Technology CO.,LTD B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No.22, Longhua New District, Shenzhen, China
<b>Manufacturer</b>	Shenzhen DOOGEE Hengtong Technology CO.,LTD B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No.22, Longhua New District, Shenzhen, China

**Note:**

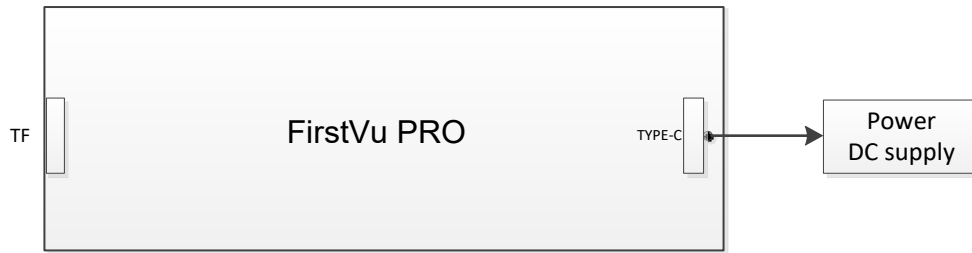
1. For more detailed features description, please refer to the manufacturer's or the User's manual of the EUT.
2. The EUT's highest operating frequency is  $> 108\text{MHz}$ .

### 3.2. Description of Test Modes

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively. The test data reflect the worst model.

<b>Test Mode</b>	
<b>Final Test Mode</b>	<b>Description</b>
1	Charging + Video play
2	Charging + Video recording
3	Date transmission

### 3.3. Configure of system under test



Test topology

### 3.4. Description of support units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Equipment	Model	Brand	FCC ID	Series No
1	Mainframe	Vostro 5890	DELL	/	/

## 4. Emission Test

### 4.1. Conduction Emission Test

#### 4.1.1.Limits

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

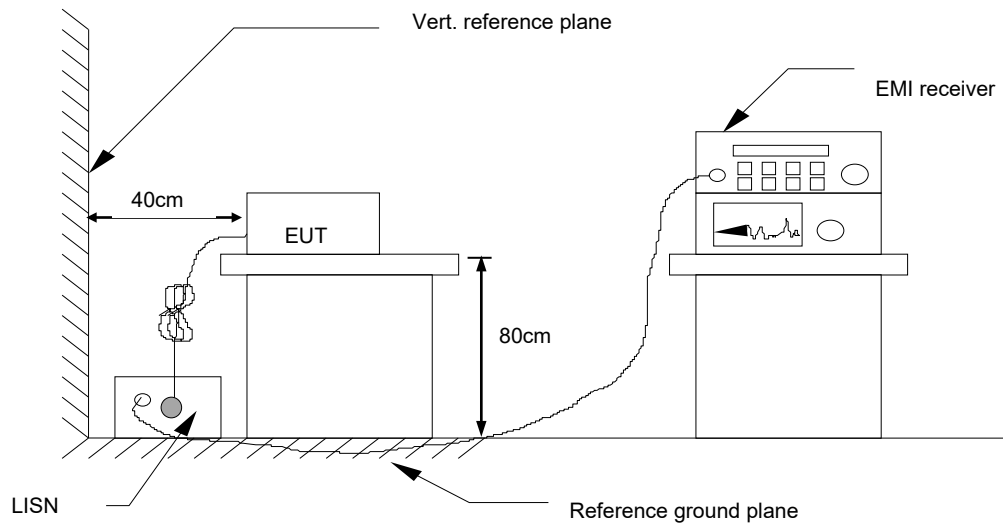
**Note:**

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 4.1.2.Test Procedures

1. Test limits and test methods reference FCC Part 15.107 Subpart B.
2. The EUT was placed 0.8 m from the horizontal ground plane and 0.4 m from the vertical groundplane with EUT being connected to the power mains through a line impedance stabilization network (AMN). All other support equipment powered from additional AMN. The AMN provide 50 Ohm/ 50 uH of coupling impedance for the measuring instrument.
3. Interconnecting cables that hang closer than 0.4 m to the ground plane shall be folded back and forth in the center forming a bundle 0.3 m to 0.4 m long.
4. The frequency range from 150 kHz to 30 MHz was searched.
5. Actual test configuration, please refer to the related Item – EUT Test Photos.
6. The thickness of the insulation shall not be more than 150 mm.

### 4.1.3. Test Set-up



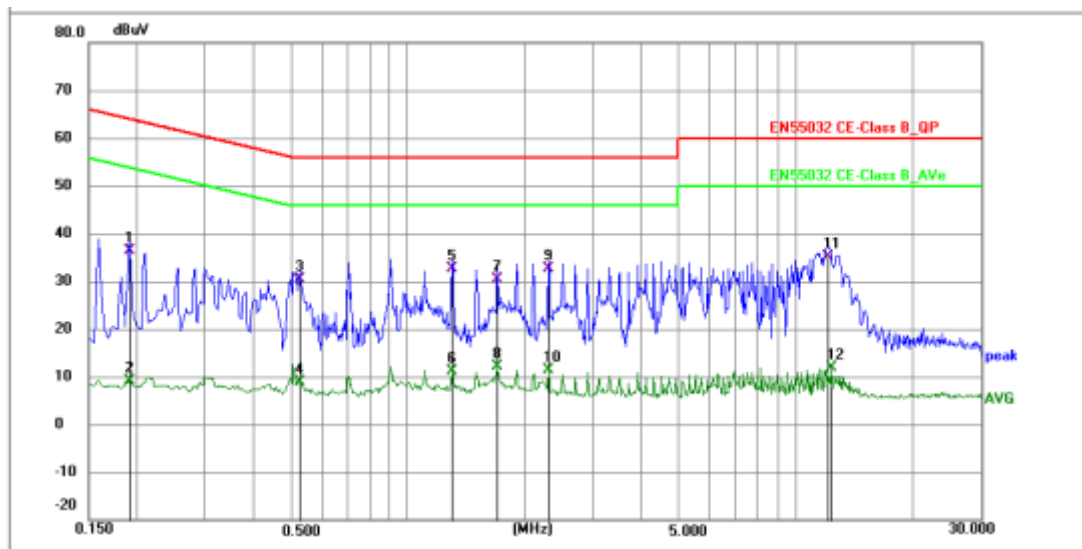
For the actual test configuration, please refer to the related item – Photographs of the test configuration

### 4.1.4. Test Results

Product Model:	V Max	RBW	9 kHz
Environmental Conditions	25° C, 49% RH	Test Mode	Mode 1
Tested by	Tang Tao	Test Results	PASS
Test Date	2022-12-21		

Note:

#### Line



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1905	26.26	10.18	36.44	64.01	-27.57	QP	P	
2	0.1905	-0.93	10.18	9.25	54.01	-44.76	AVG	P	
3	0.5233	20.19	10.26	30.45	56.00	-25.55	QP	P	
4	0.5233	-1.49	10.26	8.77	46.00	-37.23	AVG	P	
5	1.3020	22.25	10.27	32.52	56.00	-23.48	QP	P	
6	1.3020	0.74	10.27	11.01	46.00	-34.99	AVG	P	
7	1.7023	20.15	10.29	30.44	56.00	-25.56	QP	P	
8	1.7023	1.86	10.29	12.15	46.00	-33.85	AVG	P	
9 *	2.3054	22.46	10.28	32.74	56.00	-23.26	QP	P	
10	2.3054	1.10	10.28	11.38	46.00	-34.62	AVG	P	
11	12.1200	24.94	10.20	35.14	60.00	-24.86	QP	P	
12	12.3315	1.68	10.18	11.86	50.00	-38.14	AVG	P	

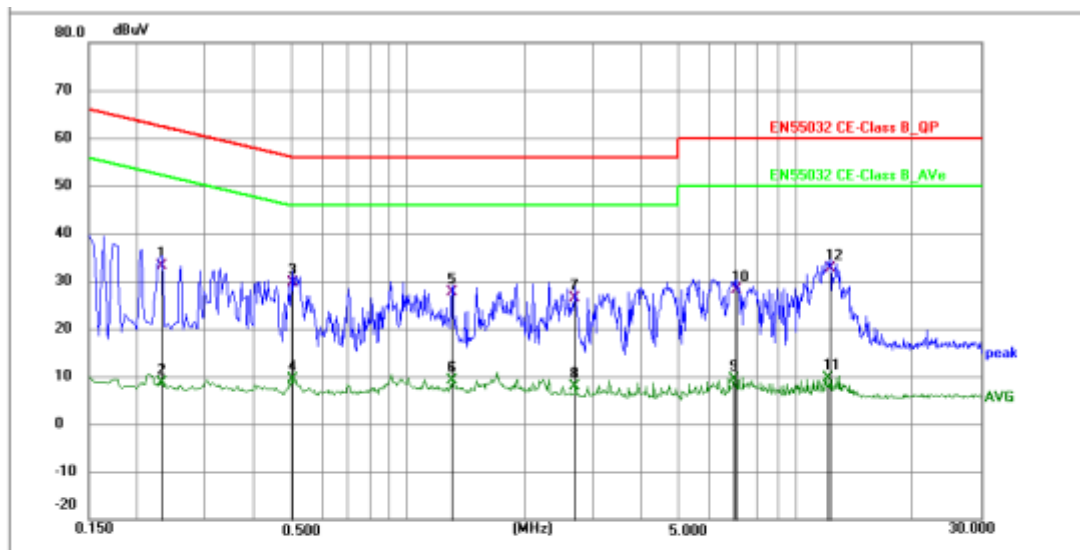
Note:

- 1、 Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
- 2、 Measurement= Reading + Correct Factor.
- 3、 Over = Result - Limit

Product Model:	V Max	RBW	9 kHz
Environmental Conditions	25° C,49% RH	Test Mode	Mode 1
Tested by	Tang Tao	Test Results	PASS
Test Date	2022-12-21		

Note:

### Neutral



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2310	22.92	10.20	33.12	62.41	-29.29	QP	P	
2	0.2310	-1.65	10.20	8.55	52.41	-43.86	AVG	P	
3 *	0.5010	19.39	10.26	29.65	56.00	-26.35	QP	P	
4	0.5010	-0.89	10.26	9.37	46.00	-36.63	AVG	P	
5	1.3020	17.27	10.25	27.52	56.00	-28.48	QP	P	
6	1.3020	-1.11	10.25	9.14	46.00	-36.86	AVG	P	
7	2.7014	16.17	10.27	26.44	56.00	-29.56	QP	P	
8	2.7014	-2.38	10.27	7.89	46.00	-38.11	AVG	P	
9	6.9180	-0.96	10.27	9.31	50.00	-40.69	AVG	P	
10	7.0484	17.85	10.28	28.13	60.00	-31.87	QP	P	
11	12.1290	-0.47	10.19	9.72	50.00	-40.28	AVG	P	
12	12.3180	22.57	10.17	32.74	60.00	-27.26	QP	P	

Note:

- 1、 Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
- 2、 Measurement= Reading + Correct Factor.
- 3、 Over = Result – Limit

## 4.2. Radiated Emission Test

### 4.2.1. Limit

FCC Part15B

Frequency (MHz)	limits at 3m (dB $\mu$ V/m)		
	QP Detector	PK Detector	AV Detector
30 – 88	40.0	--	--
88 – 216	43.5	--	--
216 – 960	46.0		
960 – 1000	54.0	--	--
Above 1000	--	74.0	54.0

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30.
1.705-108	1000.
108-500	2000.
500-1000	5000.
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

Receiver Setup:

Frequency: (f) (MHz)	Detector type	Measurement receiver bandwidth	
		RBW	VBW
30 $\leq$ f $\leq$ 1 000	Quasi Peak	120 kHz	300 kHz
f $\geq$ 1000	Peak	1 MHz	3 MHz
	Average	1 MHz	3 MHz

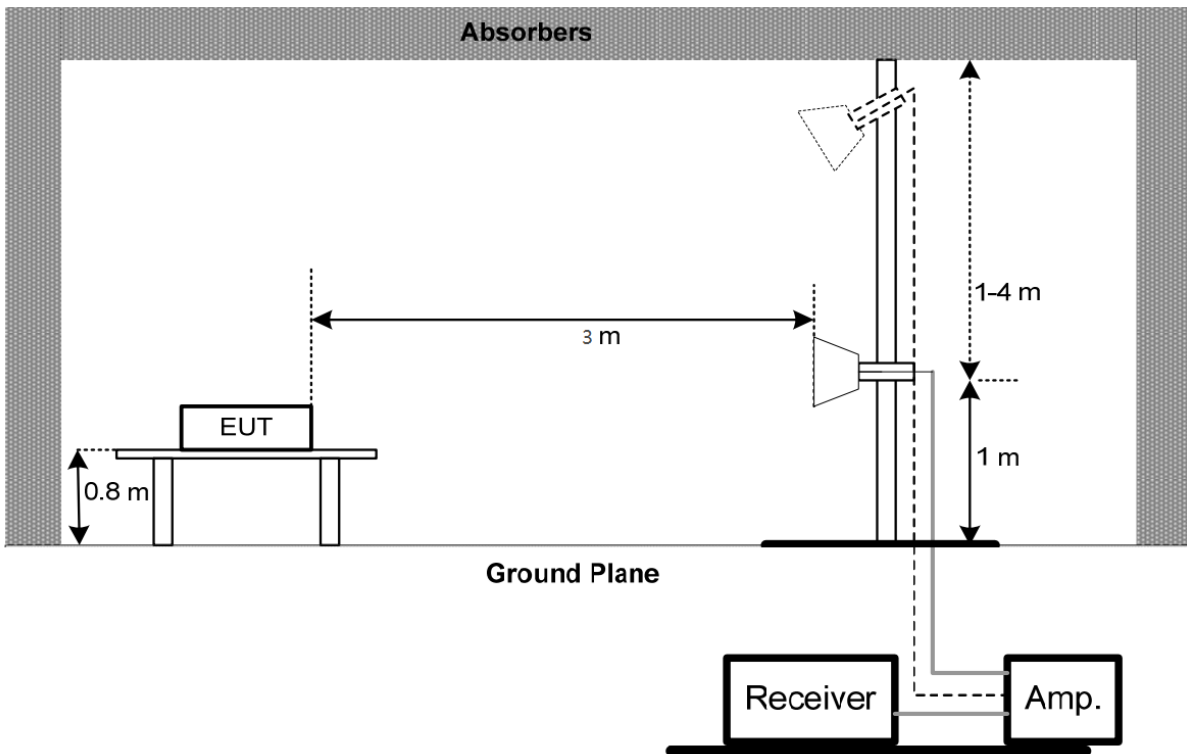
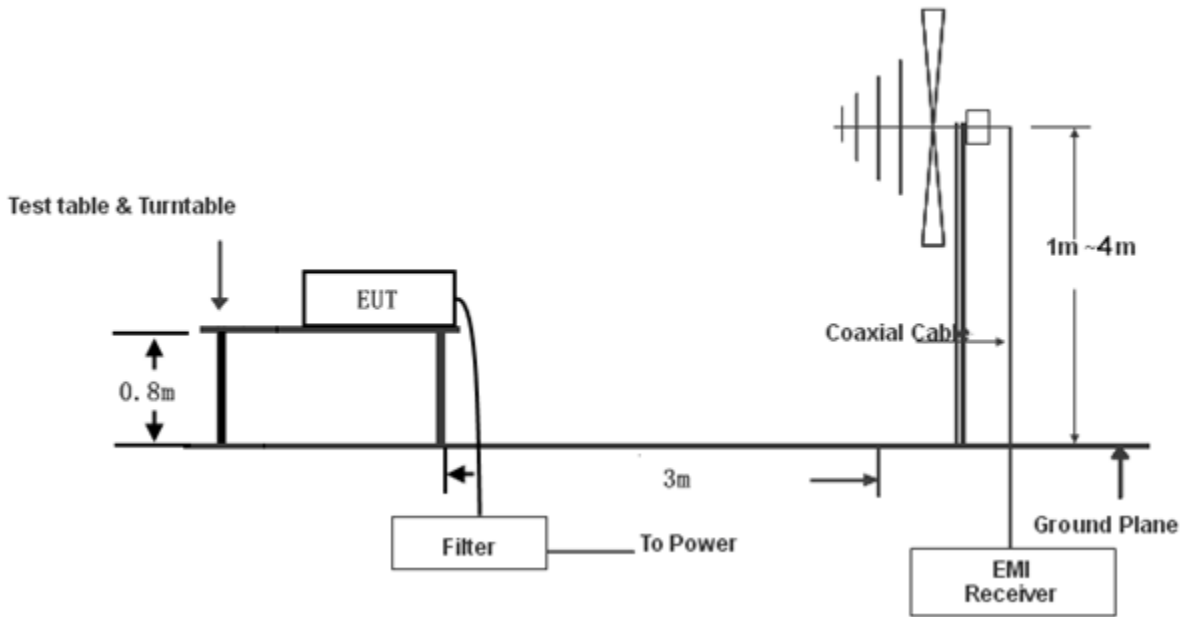


## 4.2.2. Test Procedures

Test limits and test methods reference FCC 47 CFR Part 15.109.

1. Below 1GHz, the measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 m above the ground at a 3 m semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. Above 1GHz, the measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 m above the ground at a 3 m semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
3. The height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. The initial step in collecting radiated emission data is a receiver peak detector mode.
5. Pre - scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
6. For above 1GHz, If the emission level of the EUT In "Peak Detection" mode is 20 dB lower than the "Average" limit (means that the emission level in "Peak Detection" mode also complies with the limit in "Average Mode"), testing will be stopped and "Peak" values of the EUT will be reported, otherwise, the emissions of the EUT will be measured in "Average Mode" again and then reported.
7. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1GHz).
8. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform.(above 1GHz).

**4.2.3. Test Set-up**

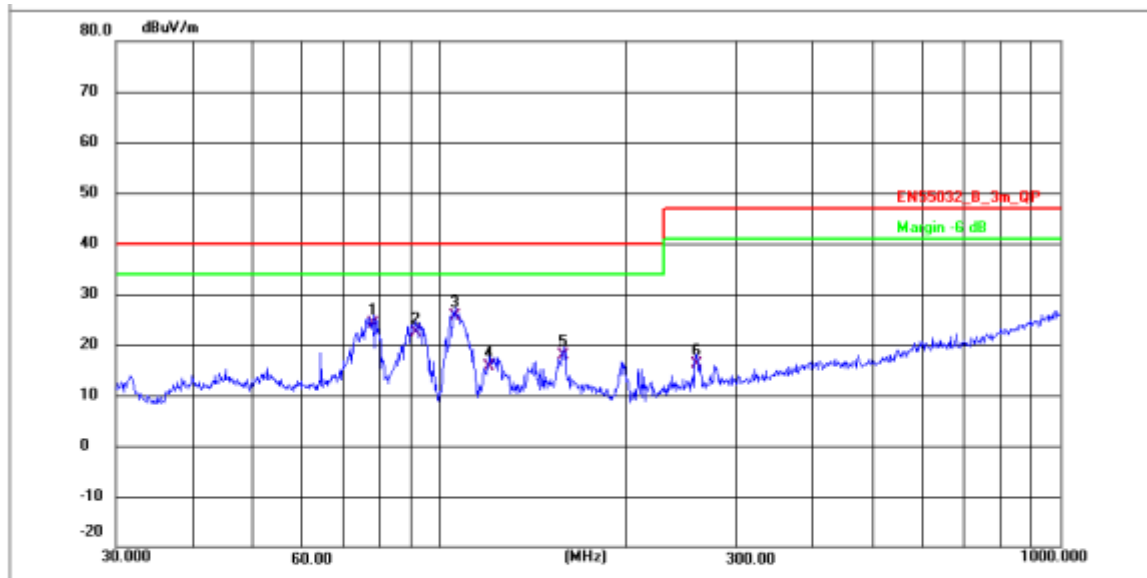


### 4.2.4. Test Results

**Below 1GHz**

Product Model:	V Max	Location	3m chamber
Environmental Conditions	22°C,45% RH	Test Mode	Mode 1
Antenna Pole	Horizontal	RBW	120 kHz
Tested by	Stone Tang	Test Results	Pass
Test Date	2023-01-08		

Note:



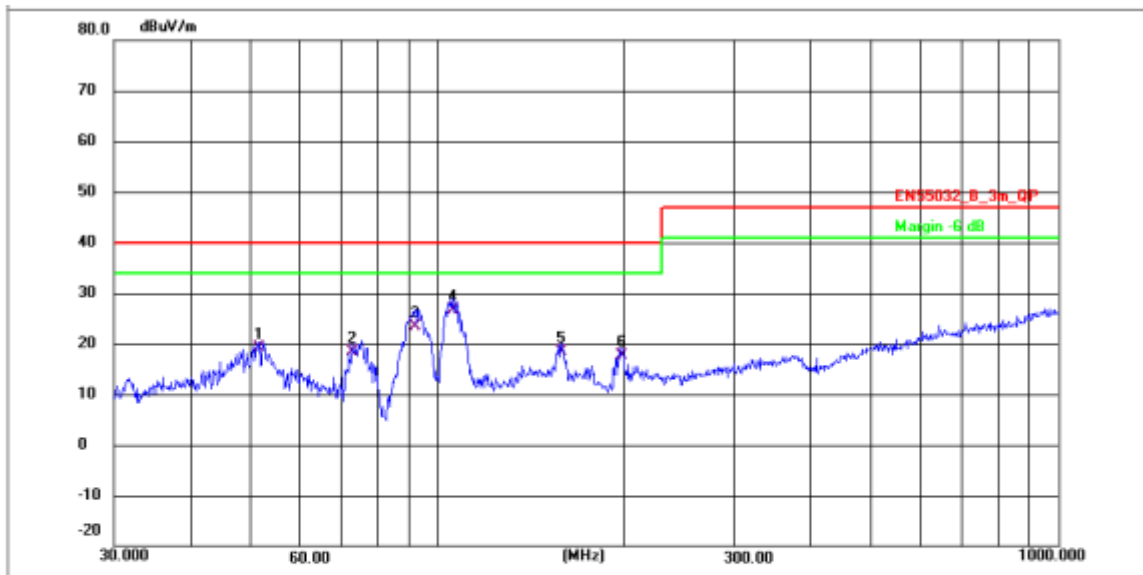
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	78.1388	52.10	-27.89	24.21	40.00	-15.79	QP	P
2	91.4947	50.24	-27.82	22.42	40.00	-17.58	QP	P
3 *	105.6414	53.41	-27.67	25.74	40.00	-14.26	QP	P
4	119.8555	43.24	-27.50	15.74	40.00	-24.26	QP	P
5	158.1123	45.16	-27.21	17.95	40.00	-22.05	QP	P
6	259.2337	42.87	-26.64	16.23	47.00	-30.77	QP	P

Note:

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Measurement= Reading + Correct Factor.
3. Over = Result - Limit

Product Model:	V Max	Location	3m chamber
Environmental Conditions	22°C,45% RH	Test Mode	Mode 1
Antenna Pole	Vertical	RBW	120 kHz
Tested by	Stone Tang	Test Results	Pass
Test Date	2023-01-08		

Note:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	51.4806	47.26	-28.03	19.23	40.00	-20.77	QP	P
2	72.5915	46.35	-27.91	18.44	40.00	-21.56	QP	P
3	92.1386	51.26	-27.81	23.45	40.00	-16.55	QP	P
4 *	105.6414	54.42	-27.67	26.75	40.00	-13.25	QP	P
5	158.1123	45.66	-27.21	18.45	40.00	-21.55	QP	P
6	197.8926	44.75	-27.01	17.74	40.00	-22.26	QP	P

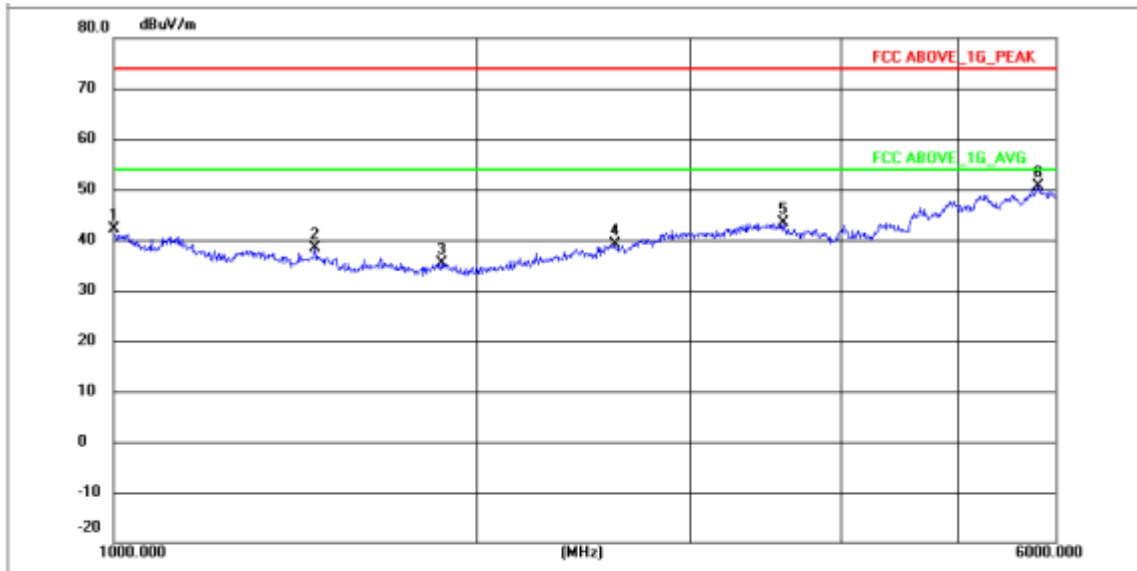
Note:

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Measurement= Reading + Correct Factor.
3. Over = Result – Limit

**Above 1GHz**

Product Model:	V Max	Location	3m chamber
Environmental Conditions	22°C,45% RH	Test Mode	Mode 1
Antenna Pole	Horizontal	RBW	1 MHz
Tested by	Stone Tang	Test Results	Pass
Test Date	2022-12-18		

Note:



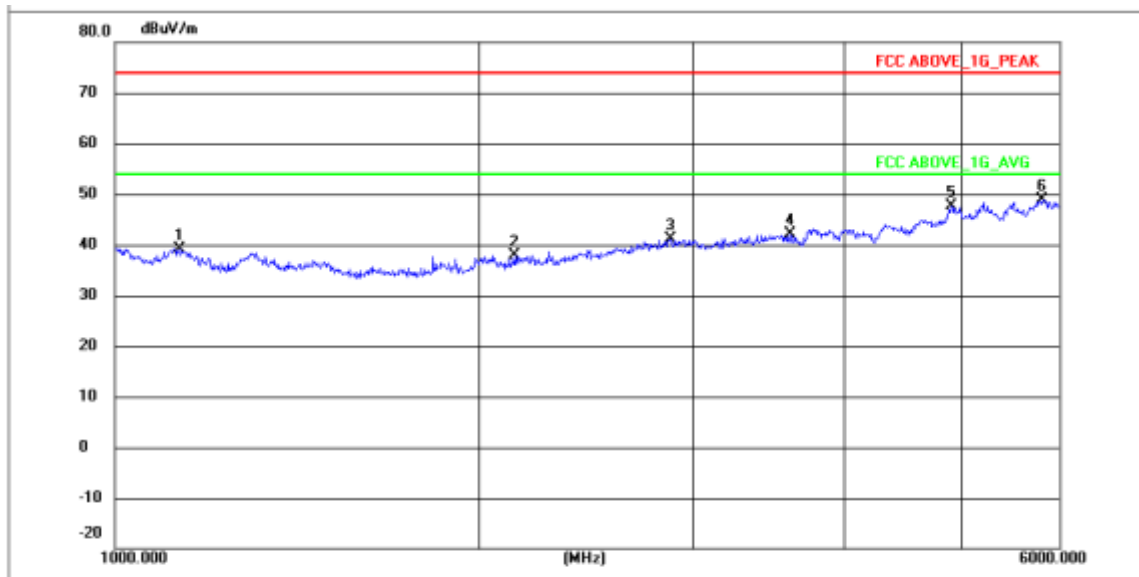
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1000.0000	45.51	-3.37	42.14	74.00	-31.86	peak	P
2	1469.950	70.35	-32.04	38.31	74.00	-35.69	peak	P
3	1872.203	67.14	-31.71	35.43	74.00	-38.57	peak	P
4	2595.434	69.92	-30.84	39.08	74.00	-34.92	peak	P
5	3581.325	73.33	-30.01	43.32	74.00	-30.68	peak	P
6 *	5819.996	77.76	-27.02	50.74	74.00	-23.26	peak	P

**Note:**

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Measurement= Reading + Correct Factor.
3. Over = Result – Limit

Product Model:	V Max	Location	3m chamber
Environmental Conditions	22°C,45% RH	Test Mode	Mode 1
Antenna Pole	Vertical	RBW	1 MHz
Tested by	Stone Tang	Test Results	Pass
Test Date	2022-12-18		

Note:



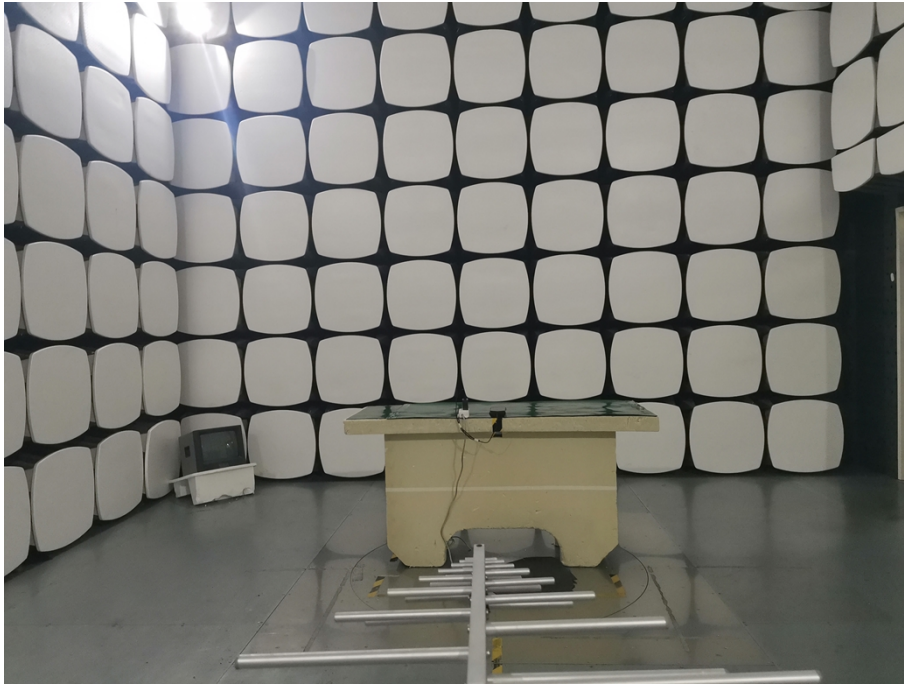
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1134.847	69.34	-30.13	39.21	74.00	-34.79	peak	P
2	2140.330	69.34	-31.40	37.94	74.00	-36.06	peak	P
3	2875.545	71.28	-30.18	41.10	74.00	-32.90	peak	P
4	3601.918	72.04	-30.03	42.01	74.00	-31.99	peak	P
5	4898.516	76.37	-28.78	47.59	74.00	-26.41	peak	P
6 *	5824.168	75.83	-27.01	48.82	74.00	-25.18	peak	P

Note:

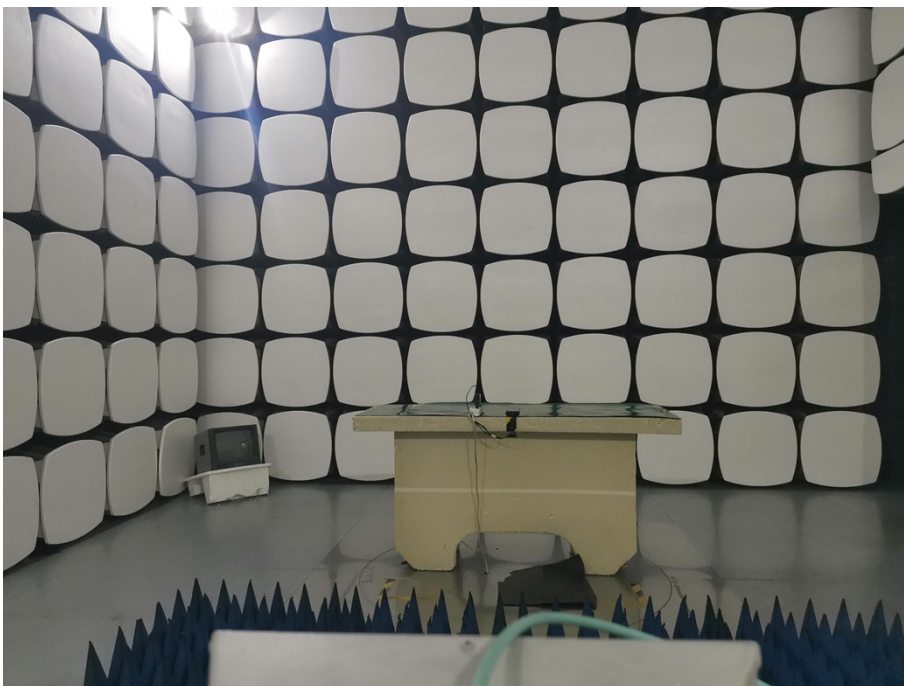
1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Measurement= Reading + Correct Factor.
3. Over = Result – Limit

## 5. Appendix-A Test Photographs

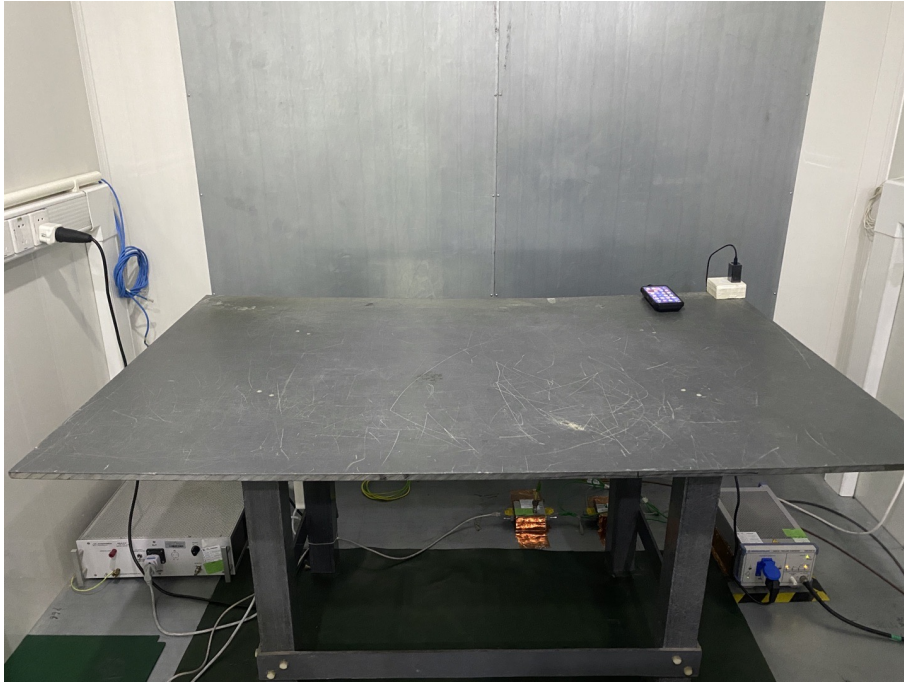
Below 1G RE



Above 1G RE

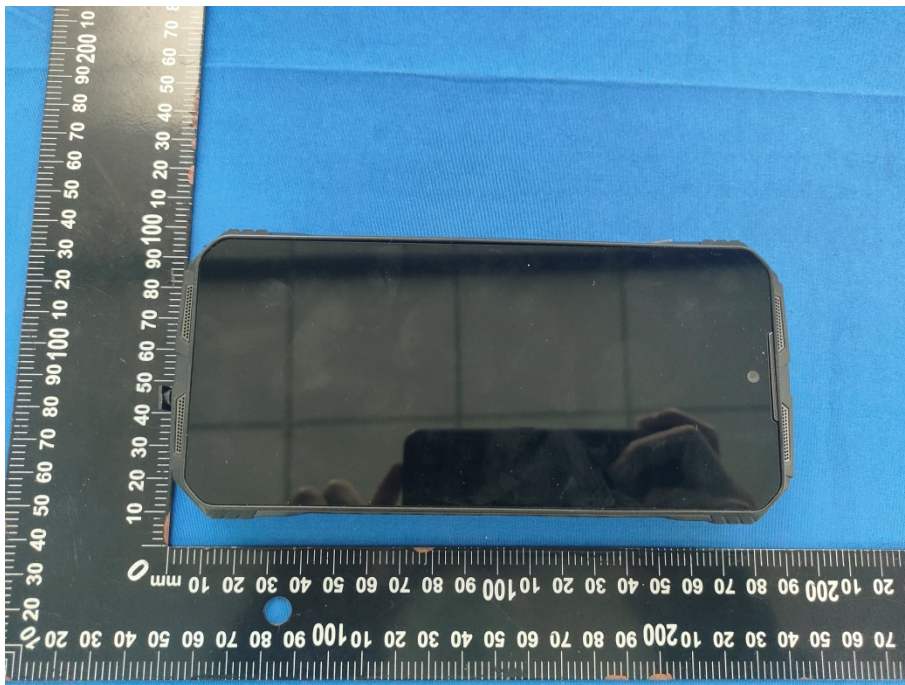


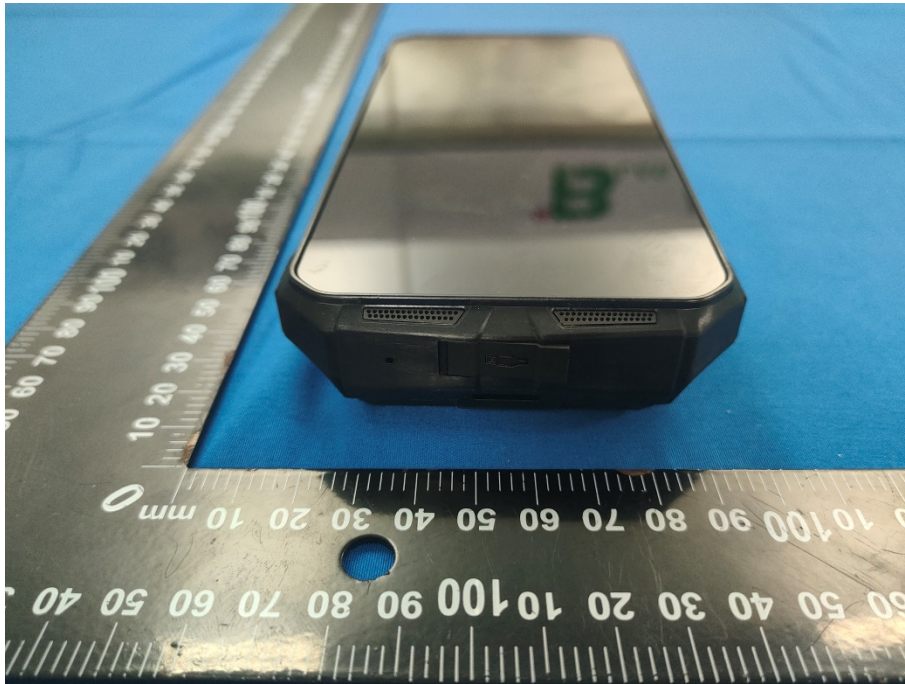
CE

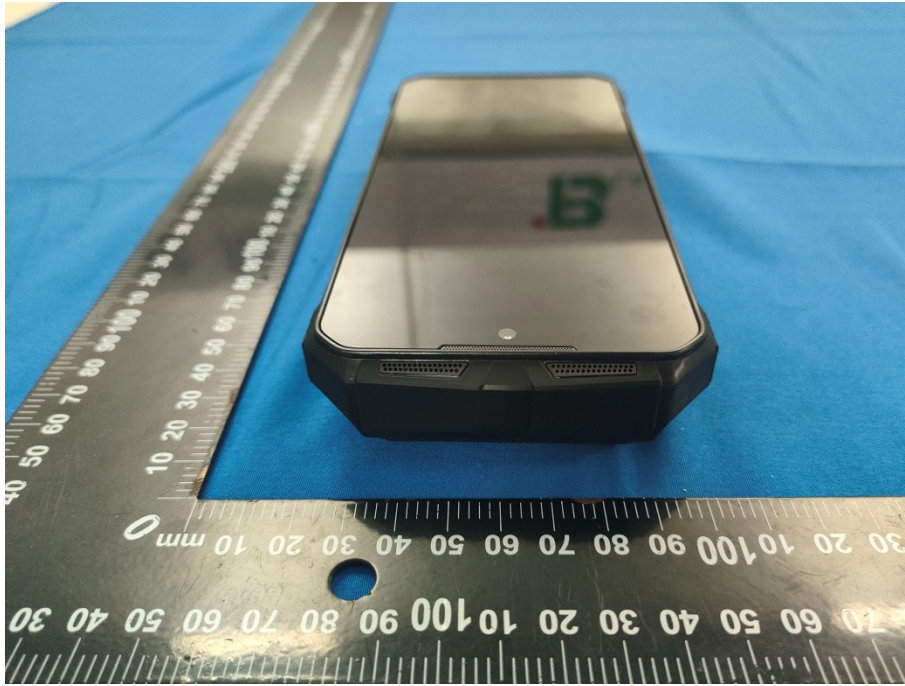




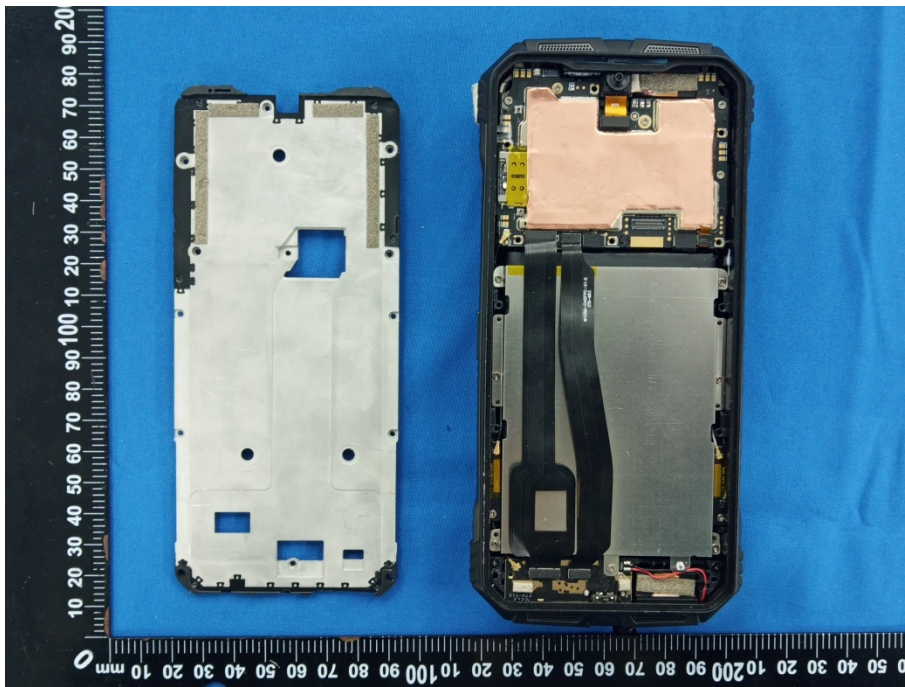
## 6. Appendix-B Photographs of EUT

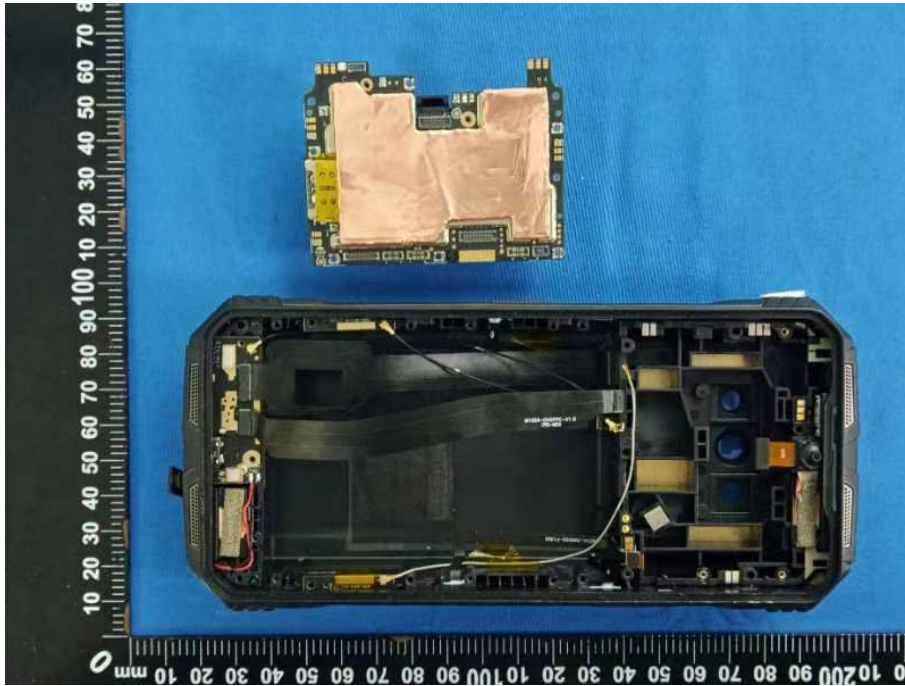
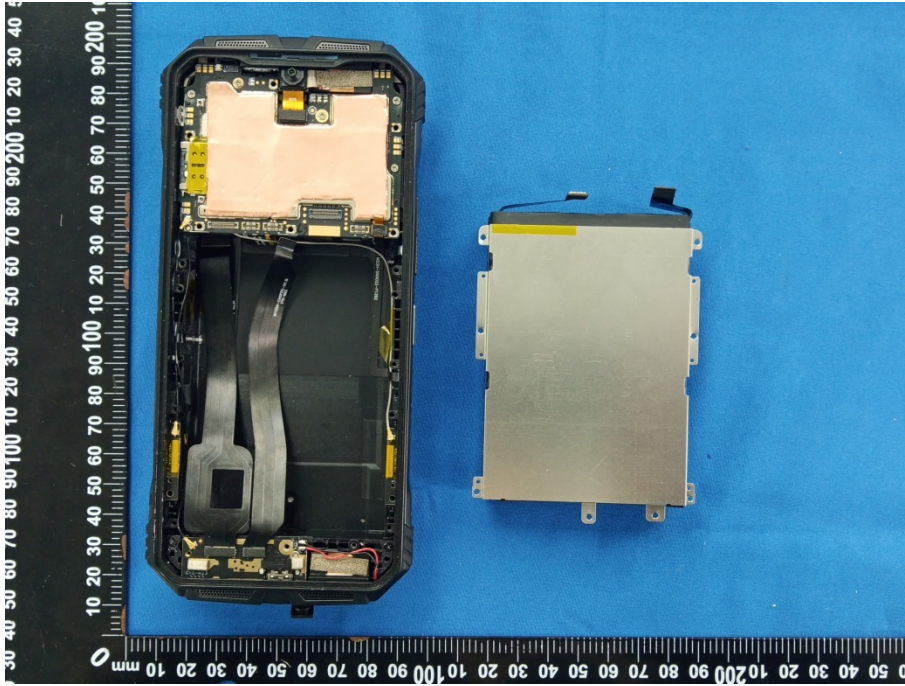


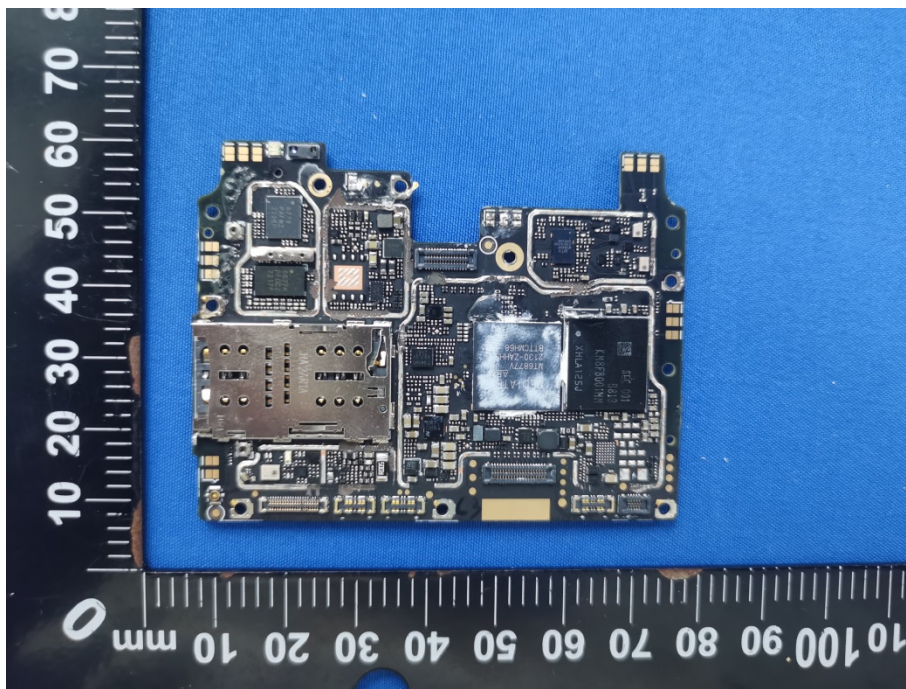
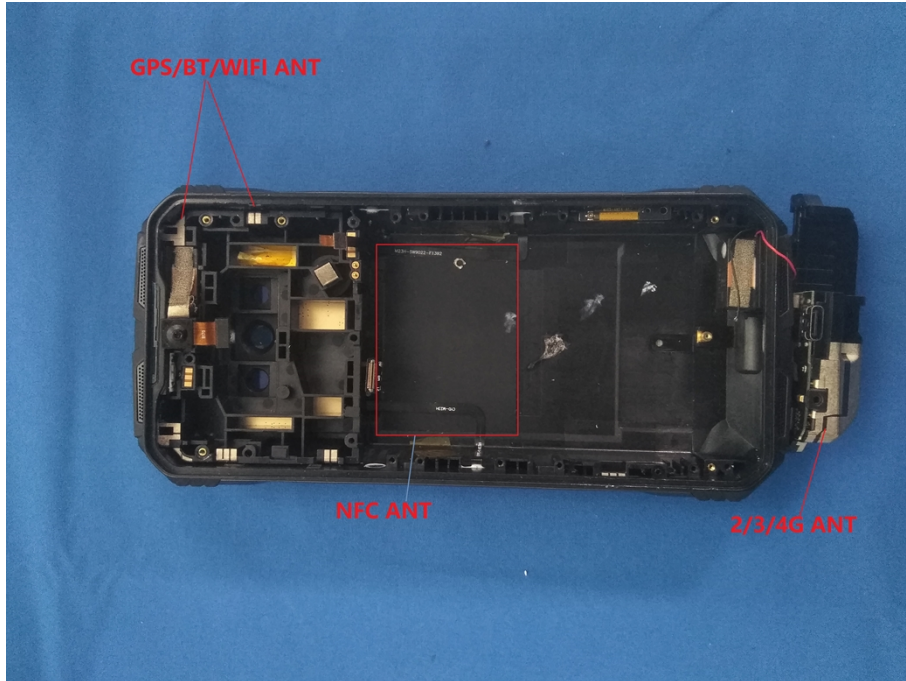


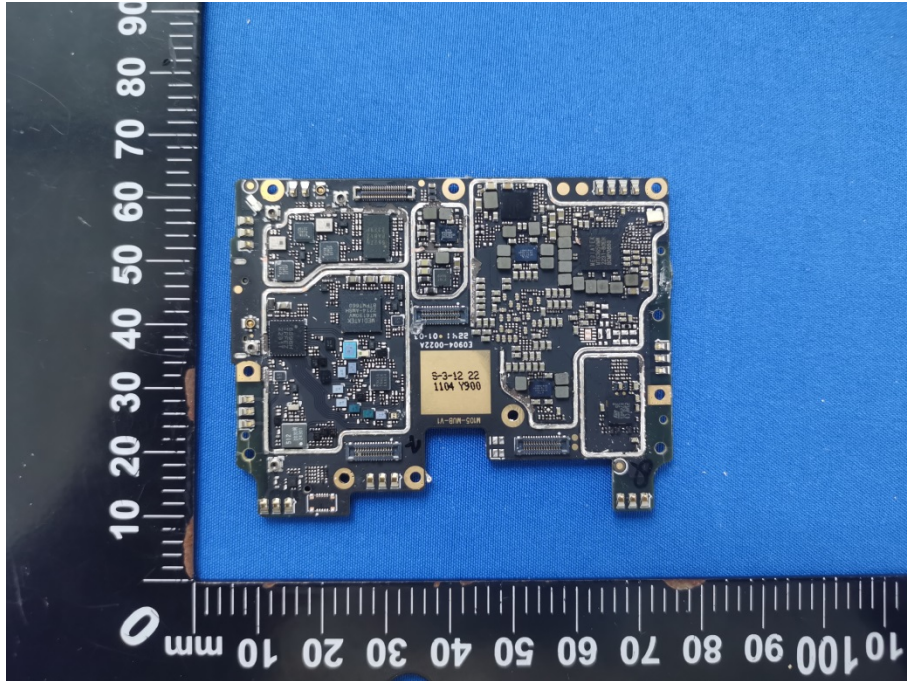














## STATEMENT

1. It is invalid if the report has no Inspection Seal.
2. It is invalid that the copy one is not sealed again.
3. It is invalid if the report has no signature or seal of tester, auditor, or approver.
4. It is invalid if the report is altered.
5. Objections to this report should be submitted to the inspection organization in 15 days of receipting the report. It is not accepted if overdue.
6. The test report is valid for above tested sample only.
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9. Forge, tamper the report, the organization will be liable for any legal liability incurred here from.

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(END OF REPORT)